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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,129	05/29/2001	Joseph J. Ervin	P6452	6472

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EXAMINER

HUYNH, KIM T

ART UNIT	PAPER NUMBER
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2112

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DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/867,129

Applicant(s)

ERVIN, JOSEPH J.

Examiner

Kim T. Huynh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-28 and 30-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-28 and 30-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11, 13, 17-28, 30, 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Cepulis (US Patent 6,397,268) in view of Porterfield (US Patent 6,542,953)

As per claims 1, 18, 35-36, discloses a method for configuring a bus system having a plurality of bus segments with bus master devices and slave devices connected thereto, the bus segments connected by bus bridges, each bus bridge having a bridge ID, a plurality of internal registers and an address bitmap for controlling information flow through the bridge wherein each bridge responds to configuration flow through the bridge wherein each bridge responds to configuration commands sent to its bridge ID, the method comprising:

A. initially setting the bridge ID of all bridges to a predetermined bridge ID value and walking the bus system to discover the bus topology and the bus bridges that form that topology by repeatedly sending data to the predetermined bridge ID values; (col.11, lines 22-37),

B. assigning a unique bridge ID different from the predetermined bridge ID value to each discovered bridge ID value; and (col.11, lines 22-47)

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C. entering information into internal registers and address bitmap of each discovered bridge to control the flow of information between bus segments.

(col.11, lines 48-67)

Cepulis discloses all the limitations as above except sending commands to the predetermined bridge ID values. However, Porterfield discloses a method of configuring first and second PCI bridges in a computer system having a processor coupled by a host bus to the PCI bridges. The processor transmits on the host bus a configuration command that includes a device identifier that identifies the second PCI bridge and a bus identifier that identifies the first PCI bus. (col.2, lines 47-60)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Porterfield's teaching into Cepulis's system so as to provide a method of configuring computer system that do not employ the traditional hierarchical architecture of the computer system. (col.2, lines 21-25)

As per claims 2, 19, discloses wherein the bus topology is a tree configuration and step comprises performing a recursive procedure that configures each branch of the tree. (col.11, lines 22-37)

As per claims 3, 20, discloses wherein the bus system has an address space and wherein step comprises probing the address space for slave devices. (col.12, lines 1-8), (col.5, line 65-col.6, line 7)

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As per claims 4, 21, discloses wherein step comprises checking for a duplicate slave address when a slave device is located. (col.6, lines 26-37)

As per claims 5, 22, discloses wherein step comprises:

- inserting a slave address of a located slave device into a global address bitmap if the slave address is not a duplicate; and (col.6, lines 26-37)
- Inserting the slave address into a tunnel list if the slave address is a duplicate. (col.6, lines 38-51)

As per claims 6, 23, discloses wherein step further comprises repeatedly probing the address space for upstream bridges when no slave device is located. (col.6, lines 26-37)

As per claims 7, 24, discloses wherein step comprises assigning a bridge ID value to each located upstream bridge. (col.11, lines 22-37)

As per claims 8-10, 25-27, discloses method further comprises repeatedly probing for downstream bridges when no further upstream bridges are located in step repeatedly probing the address space for upstream bridges when no slave device is located. (col.11, lines 22-67)

As per claims 11, 28, discloses method further comprising:

- Walking the bus system to discover upstream bridges; and (col.11, lines 22-37), (col.4, lines 45-61)
- Entering information into internal registers and address bitmap of each discovered upstream bridge to control the flow of information between bus segments. (col.11, lines 48-67)

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As per claims 12, 29, discloses wherein step comprises setting the bridge ID of all bridges to a predetermined bridge ID upon reset and successively configuring each bridge by sending commands and data to the predetermined bridge ID.

(col.8, lines 45-67)

As per claims 13, 30, discloses wherein step comprises connecting all bridges on the same hierarchical level so that only one bridge at a time responds to the predetermined bridge ID. (col.4, lines 5-7), (col.4, lines 17-34)

As per claims 17, 34, discloses the method further comprising providing additional information to each bridge to enable the bridge to operate with a deterministic arbitration protocol.(col.4, lines 11-61)

3. Claims 14-15, 31-32, are rejected under 35 U.S.C. 103(a) as being unpatentable over Cepulis (US Patent 6,397,268) in view of Porterfield (US Patent 6,542,953) and further in view of Story et al. (US Patent 6,260,092)

Cepullis discloses all the limitations as above except wherein all bridges on the same hierarchical level are connected in a daisy chain configuration wherein enables the next bridge to respond to the predetermined bridge.

However, Story discloses bridges are connected in a daisy chain. The output of each interface inputs the input of the next interface in the chain and so forth.

(col.7, lies 45-55)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Story's teaching into Cepullis's method so as to provide devices and methods for reducing interconnect signal

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line count by using a serially connected bus and to improve the operation of so that the bandwidth can be improved to make this serial connection function as a practical alternative to existing parallel busses. (col.1, lines 49-57)

4. Claims 16, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cepulis (US Patent 6,397,268) in view of Porterfield (US Patent 6,542,953) and further in view of Mayo et al. (US Patent 6,205,147)

Cepullis discloses all the limitations as above except wherein two unidirectional bridges are connected in parallel. However, Mayo's system allow multiple bridges connected in parallel. (col.3, lines 29-38)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Mayo's teaching into Cepullis's method so as to provide the ability to perform security functions. (col.1, lines 47-57)

Response to Amendment

5. Applicant's amendment filed on 3/12/04 have been fully considered but are moot in view of the new ground(s) of rejection.

a. In response to applicant's arguments that Cepullis does not disclose sending commands to the predetermined bridge ID values. However, Porterfield discloses a method of configuring first and second PCI bridges in a computer system having a processor coupled by a host bus to the PCI bridges. The processor transmits on the host bus a configuration command that includes a device identifier that identifies the

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second PCI bridge and a bus identifier that identifies the first PCI bus. (col.2, lines 47-60)

Thus, the prior art teaches the invention as claimed and the amended claims do not distinguish over the prior art as applied.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703)305-5384 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 8:30AM- 6:30PM.*

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815 or via e-mail addressed to [mark.rinehart@uspto.gov]. The

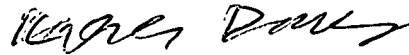
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fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5631.

Kim Huynh

May 27, 2004



Khanh Dang
Primary Examiner